



Effects of ambient temperature on the incidence of myocardial infarction

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Abstract:

CONTEXT: While the effects of weather and, in particular, ambient temperature on overall mortality are well documented, the strength of the evidence base for the effects on acute myocardial infarction (MI) are less clear. **OBJECTIVE:** To systematically review studies specifically focusing on the effects of temperature on MI. **DATA SOURCES:** Medline, Embase, and GeoBase publication databases, as well as reference lists, and the websites of a number of relevant public organisations. **STUDY SELECTION:** Studies of original data in which ambient temperature was an exposure of interest and MI a specific outcome were selected. **DATA EXTRACTION:** The reported effects of ambient temperature on the risk of MI, including effect sizes and confidence intervals, where possible, were recorded. Methodological details were also extracted, including study population, location and setting, ascertainment of MI events, adjustment for potential confounders and consideration of lagged effects. **RESULTS:** 19 studies were identified, of which 14 considered the short-term effects of temperature on a daily timescale, the remainder looking at longer-term effects. Overall, 8 of the 12 studies which included relevant data from the winter season reported a statistically significant short-term increased risk of MI at lower temperatures, while increases in risk at higher temperatures were reported in 7 of the 13 studies with relevant data. A number of differences were identified between studies in the population included demographics, location, local climate, study design and statistical methodology. **CONCLUSION:** A number of studies, including some that were large and relatively well controlled, suggested that both hot and cold weather had detrimental effects on the short-term risk of MI. However, further research with consistent methodology is needed to clarify the magnitude of these effects and to show which populations and individuals are vulnerable.

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Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change;
 surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Researcher



Climate Change and Human Health Literature Portal

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Co-Benefit/Co-Harm (Adaption/Mitigation):

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact:

specification of health effect or disease related to climate change exposure

Cardiovascular Effect

Cardiovascular Effect: Heart Attack

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content